

Estimation of rate of recovery of disturbed soils from ground-based logging in Peninsular Malaysia

ABSTRACT

A field study was conducted to determine the rate of natural recovery of compacted soils in a logged-over hill forest area in Sg. Tekam, Pahang, Peninsular Malaysia. Based upon regression analysis, the estimated average times required for natural recovery of bulk density, total porosity, saturated hydraulic conductivity and resistance to penetration on skid trail, bush landing and secondary forest road to conditions found in the undisturbed soil are respectively listed in consecutive order as follows: (i) 22, 17 and 14 years; (ii) 24, 17 and 15 years; (iii) 52, 37 and 28 years; and (iv) 19, 14 and 12 years. The study showed that ground-based logging is most damaging to the skid trails, as the natural rate of recovery of such disturbed soils is exceedingly slow compared to bush landing and secondary forest road. Future research should focus on improved logging machine and systems that will lessen the damage on skid trails.

Keyword: Disturbed soils; Ground-based logging; Rate of recovery